Office Action Summary	Application No.	Applicant(s)	
	10/796,882	RADUNSKY ET AL.	
	Examiner	Art Unit	
	Joseph W. Drodge	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02142008*.

4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *02142008*.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Claims 17-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 17, the terms "ultrafiltrate" and "stream of filtered blood" both conventionally are understood to refer to blood fluid which has permeated through a blood filter or membrane filter pores. Hence the apparatus claims are confusing as to whether these two streams are separate streams and which stream represents fluid permeated through filter pores.

Similarly, claim 24 is confusing as to whether the return stream and ultrafiltrate refer to the same or different, separated fluids, and confusing as to which stream represents fluid that has permeated through the filter pores.

In addition, claim 20 now conflicts with amended independent claim 17 since it recites a broader range than claim 17; also claim 21 is now redundant to recitation in claim 17 of molecular weight cut-off of less than 1,000,000 Daltons.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 17-24 are rejected under 35 U.S.C. 102(b as anticipated by Nose et al patent 4,402,940 or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nose et al patent 4,402,940 in view of Kotitschke patent 4,900,720 and/or Hoffman et al patent 5,661,124. Nose et al disclose extracorporeal blood filtration circuit (column 1, lines 17-33): comprising a blood filter with molecular weight cutoff between 150,000 and 1,000,000 Daltons (column 2, lines 30-36 and column 3, lines 46-56), the filter sieving toxic and toxic molecules while avoiding removal of significant amounts of immunoglobulins from the blood (igG), (column 2, lines 30-36), the filter creating an 'ultrafiltration' stream that is removed and a filtered stream that is returned to the patient (column 9, lines 23-25), there being an ultrafiltration rate of between

about 2 and 20 liters per hour (column 7, lines 30-34), and a source of replacement fluid comprising target receptor molecules comprising albumin for infusion into the blood circuit (column 7, lines 27-30).

The apparatus claims may optionally be considered to differ in requiring the replacement fluid as containing sufficient albumin to maintain adequate osmotic pressure and to adequately replenish ongoing losses if such is deemed a structural limitation, although such is inferred at Nose column 9, lines 24-25 "bare decrease in levels of albumin". However, Kotitschke teach replenishment fluid having such target receptor molecules (column 1, lines 37-45 and column 3, lines 35-52) and Hoffman teaches sufficient albumin to maintain osmotic pressure, thus replenish losses. If necessary , it would have been obvious to one of ordinary skill in the art to have modified the Nose et al system, by incorporating a source and/or infusion means to effect such level of replenishment of albumin and/or other receptor molecules.

The apparatus claims also optionally differ in requiring that the replacement infusion fluid contains ***clean*** target receptor molecules, if such is deemed a structural limitation. However, Kotitschke discloses a pharmaceutical grade solution (see plasma exchange medium beginning at Abstract and text beginning at column 3, line 52 concerning the formulation being in solution) that is formulated to treat many toxic diseases (column 1 lines 37-45, etc.), and contains albumin (up to 35-50 g/l or more), inflammatory mediators (igG, igA) and other receptor molecules (column 3, lines 35-52). ***The albumin and other constituents in the replacement fluid medium are rendered sterilized or "clean", as claimed,*** by ultrafiltration, exposure to a proprolactone sterilizing substance and exposure to ultraviolet (UV) radiation (column 3, lines 45-51 and several sections of text of column 6, lines 32-66). The albumin and

other constitutents also have binding sites operable to attract inflammatory mediators from tissue of the patient. It would have been obvious to one of ordinary skill in the art to have included the clean target receptor molecules with the infusion fluid of Nose et al, as taught by Kotitschke, in order to treat diseases of the patient whose blood is being purified, and to avoid contaminating the patient's blood thus introducing infections and other health problems.

For claims 18,19 and 23, Nose, column 9, lines 24-25 infers that concentration of albmin in the replacement fluid is adequate to replenish losses.

For claims 20-22, column 2, lines 32-34 of Nose covers the entire extent of the claimed molecular cut-off weight range.

Claims 24-29,31 and 34-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nose et al patent 4,402,940 in view of Kotitschke patent 4,900,720.

Nose et al disclose extracorporeal blood filtration circuit for withdrawing fluid from and returning blood to a patient (column 1, lines 17-33): comprising a blood filter with molecular weight cutoff between 150,000 and 1,000,000 Daltons (column 2, lines 30-36 and column 3, lines 46-56), the filter sieving toxic and toxic molecules while avoiding removal of significant amounts of immunoglobulins from the blood (igG), (column 2, lines 30-36), the filter creating an 'ultrafiltration' stream that is removed and a filtered stream that is returned to the patient (column 9, lines 23-25), there being an ultrafiltration rate of between about 2 and 20 liters per hour (column 7, lines 30-34), and a source of replacement fluid comprising target receptor molecules comprising albumin for infusion into the blood circuit (column 7, lines 27-30).

The method claims differ in requiring that the replacement infusion fluid contains ***clean*** target receptor molecules. However, Kotitschke discloses a pharmaceutical grade solution (see plasma exchange medium beginning at Abstract and text beginning at column 3, line 52 concerning the formulation being in solution) that is formulated to treat many toxic diseases (column 1 lines 37-45, etc.), and contains albumin (up to 35-50 g/l or more), inflammatory mediators (igG, igA) and other receptor molecules (column 3, lines 35-52). ***The albumin and other constituents in the replacement fluid medium are rendered sterilized or "clean", as claimed,*** by ultrafiltration, exposure to a proprolactone sterilizing substance and exposure to ultraviolet (UV) radiation (column 3, lines 45-51 and several sections of text of column 6, lines 32-66). The albumin and other constitutents also have binding sites operable to attract inflammatory mediators from tissue of the patient. It would have been obvious to one of ordinary skill in the art to have included the clean target receptor molecules with the infusion fluid of Nose et al, as taught by Kotitschke, in order to treat diseases of the patient whose blood is being purified, and to avoid contaminating the patient's blood thus introducing infections and other health problems.

For claims 25, Nose et al discuss molecular weight cut-off (column 2, lines 30-35).

For claims 26-29, the infusion fluid may contain a concentration of albumin which may fall within a specific claimed concentration range of between about 0.5 g/100 ml (5g/l) to 20 g/ml (200g/l), (see Kotitschke at column 3, line 38, and Tables at columns 7 & 8). Kotitschke also teaches various specific receptor and inflammatory mediator molecules including igG, igA, igM, and macroglobulin.

For claim 31, all of the ultrafitrate may be removed (column 2, lines 37-38 of Nose).

For claims 34-35, filtration rates governing amounts of ultrafiltrate removed may be adjusted by altering transmembrane pressure, flow rate and treating time (Nose at column 7, lines 30-36, and are necessarily dictated by patient parameters for health and safety reasons.

For claims 36,37,40 and 41, the fluid is introduced into the vein of the patient which constitutes a portion of the blood circuit (column 7, line 29 of Nose).

For claim 38 and 39, Nose et al concern removal of constituents with such diseases as rheumatism and Goodpasture's syndrome which are inflammatory in nature.

For claims 42, see Nose et al regarding treating time in the range of 4 hours (column 7, line 36).

For claims 43 and 44, Nose et al disclose the recited ultrafiltration rates (column 7, lines 32-33).

For claims 36 and 37, fluid delivery may be concurrent with the hemofiltration (For claim 38 and 39, Kotitschke includes replacement receptor and inflammatory mediator molecules (see column 3, lines 29-47 concerning igG, igA, igM and macroglobulin) and discloses removal or treatment of inflammatory mediator toxins (Abstract).

For claims 40 and 41, discloses infusing the replacement fluid directly into the patient or into the circuit.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nose et al in view of Kotitschke patent 4,900,720, as applied to claims 24-28 and further in view of Hoffman et al patent 4,968,432. Claim 30 further differs by requiring the infusion fluid to contain sufficient albumin to maintain adequate oncotic pressure in the patient. Hoffman teaches

sufficient albumin to maintain osmotic pressure , both teachings having motivations concerning the well-being and overall health of the replacement fluid.

Claims 32and 33are rejected under 35 U.S.C. 103(a) as being unpatentable over Nose et al in view of Kotitschke patent 4,900,720, as applied to claims 24-28 and further in view of Davidner etal patent 6,193,681. These claims further differ in requiring that at least a portion of the ultrafiltrate be cleaned, or specifically, with an adsorbent material prior to return to the patient. Davidner teaches such process step (column 5, lines 45-55). It would have also been obvious to have introduced such cleaning/sorption into the Nose et al system, to remove positively and negatively charged bacterial contaminants.

Applicant's arguments with respect to claims 17-44 have been considered but are moot in view of the new grounds of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Roy Sample, can reached at 571-272-1376. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

4/1/2008

/Joseph W. Drodge/

Primary Examiner, Art Unit 1797